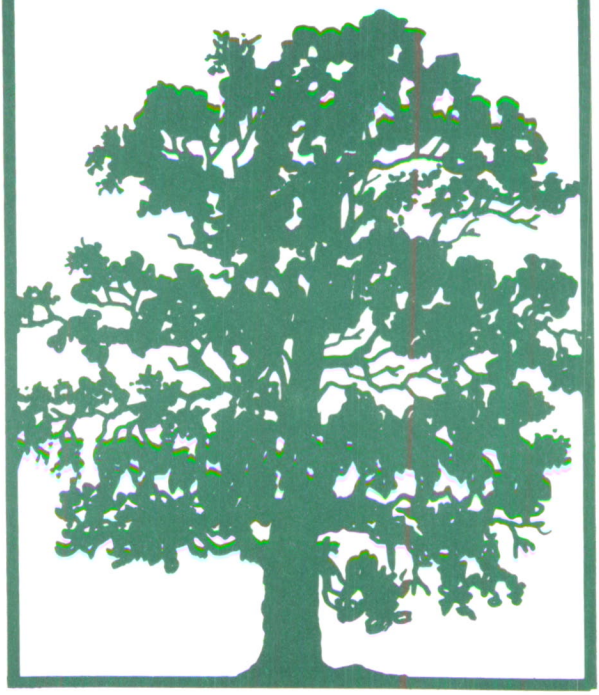
PLANTING SHADE TREES



Illinois
Department of
Natural Resources
Division of Forest Resources

TREE PLANTING AND ARBOR DAY

Arbor Day was an idea of J. Sterling Morton, a member of the Nebraska State Board of Agriculture, who recognized the importance of trees and urged his Legislators to set aside a day "consecrated to tree planting." His promotion was successful and the first Arbor Day was celebrated in Nebraska in 1872. Now it is observed in every state and some foreign countries.

Illinois has observed Arbor Day since 1887. In 1949 it was designated by statute to be observed on the last Friday of April each year.

THE IMPORTANCE OF TREES

MAN
I keep you warm in freezing winter night
I am your shade from scorching summer sun
The roof-joists of your house, your table's board
I am the bed in which you sleep at night
The wood of which your mighty ships are built
I am your pick axe shaft, your cabin's door
The wood of your cradle and your coffin
I am the bread of goodness, flower of beauty
Answer my prayer: Do not destroy me.

PORTUGUESE POEM

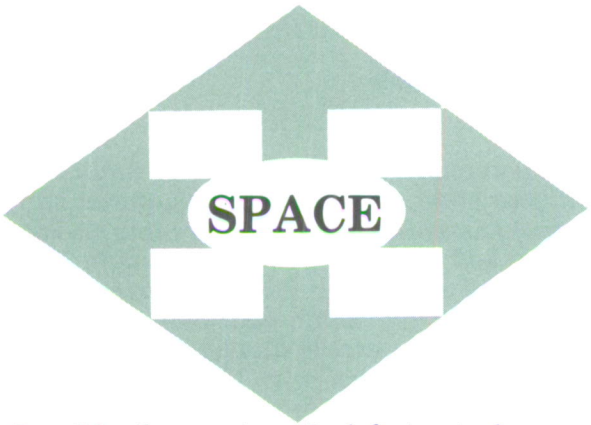
Trees keep our air supply fresh by absorbing pollutant gases and filtering out dust and other particulate matter, produce oxygen, slow winds, absorb noise, stabilize soils, provide wildlife habitat and provide many important products. Planting trees is a simple action that everyone can become involved in to help improve the environment.

SELECTING A TREE

A tree properly planted and cared for can do much to beautify your home, neighborhood and community. However, no one tree is perfect for all locations and purposes. A tree is a rather permanent item. Avoid mistakes and consider the following when selecting a tree:

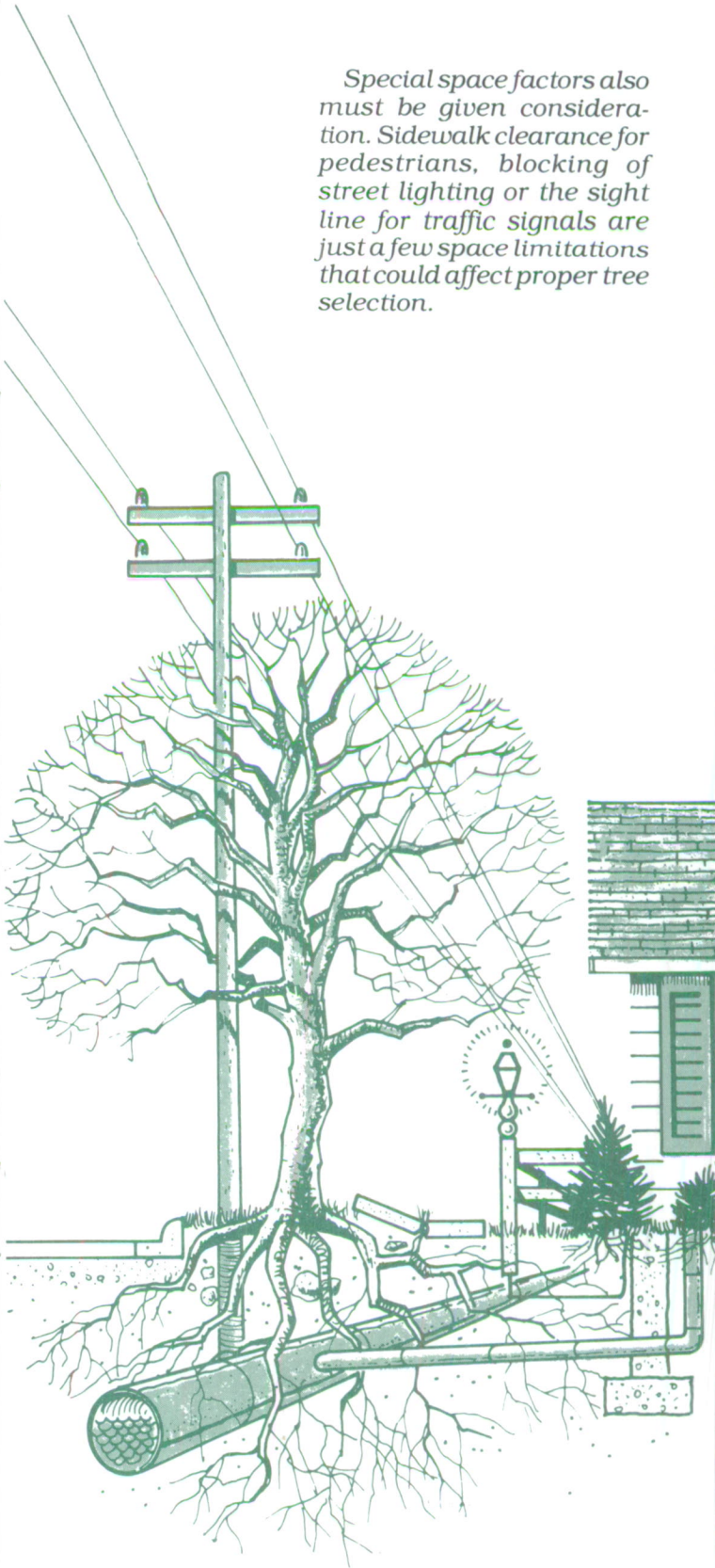
- How will the tree be used — for shade, to enframe, screen (wind, noise, view), for accent, color and beauty?
- How will the location of your tree affect your house, sidewalk, electric wires, sewer, lawn, play area, flower beds and other plants?
- Is the space you have allotted for your tree big enough for the tree at maturity?
- What shape should the tree have?
- Does the tree have insect or disease problems, break easily under wind, snow or ice, produce debris, or have other undesirable characteristics?
- Is the tree hardy enough to withstand temperature extremes in your area?

All of the above are important points to consider when selecting a tree. Answers to your questions can be found by consulting your nurseryman, from books at your local library, or your District Forester.



Possibly the most critical factor to be considered when selecting a tree is space. Consideration must be given space availability underground, overhead and in all directions from the point where the tree will be planted. The mature tree, total height, crown-trunk size and rooting characteristics must be considered. Underground utilities, overhead wires, trees already present nearby, buildings or streets and sidewalks can all physically limit space.

Special space factors also must be given consideration. Sidewalk clearance for pedestrians, blocking of street lighting or the sight line for traffic signals are just a few space limitations that could affect proper tree selection.



OBTAINING TREES

Trees can be obtained from the nursery or garden center in several forms. No single type is appropriate for all situations. The Illinois Nurseryman's Association, 1717 S. 5th, Springfield, Illinois, 62703 maintains a list of member firms that sell nursery stock in Illinois.

Bare-root stock — No soil is moved with bare-root plants. Many of the large roots are undamaged, but most of the fine roots are lost. Bare-root trees are usually less than 2 inch caliper and should be planted when dormant.

Balled and burlapped or potted stock — A ball of soil, containing the roots, is wrapped in burlap and moved with the tree. This is a very common method of transplanting large trees. Balled and potted stock is similar to balled and burlapped except that the root ball is placed in a container instead of wrapped with burlap.

Container grown stock — The plant is grown in a container and the container is sold with the plant. Because no digging is involved, container grown plants do not suffer root loss during transplanting.

PROTECTING YOUR TREE

Choose planting stock carefully. Check twigs for flexibility and for well formed buds. Carry stock by holding the rootball or container. Do not use the tree trunk as a carrying handle, since this may damage the root ball.

When transporting the plants from the nursery do not allow them to be exposed to the wind. Even dormant plants that have been left in a hot vehicle or in the back of a pick-up truck will dry-out and may die. Wrap the plants in a tarp to protect them from the wind and the sun.

Prior to planting keep the trees up right, in a shaded location. To prevent excessive drying cover the root ball or container with mulch and water the plants enough to keep the soil moist. The roots of bare-root plants should be kept moist at all times.

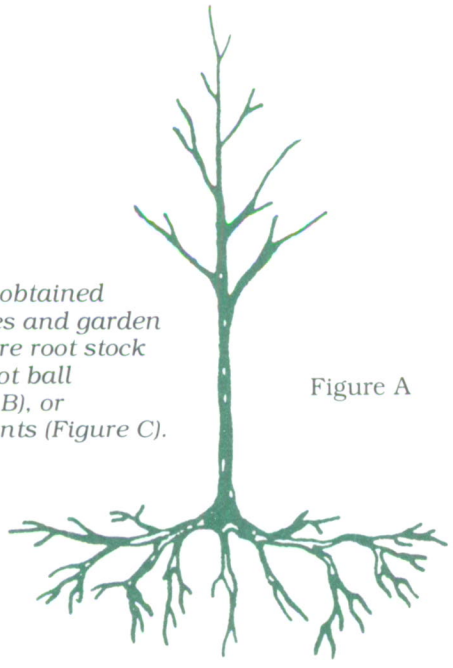


Figure A

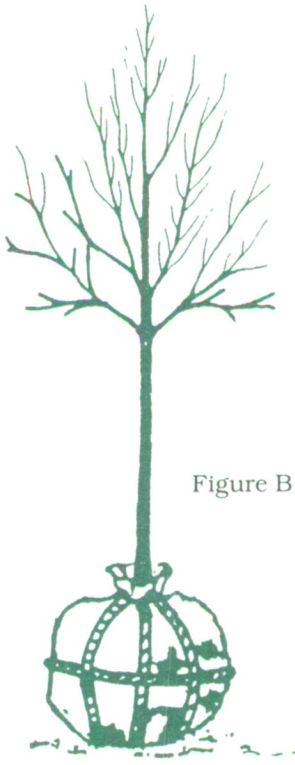


Figure B

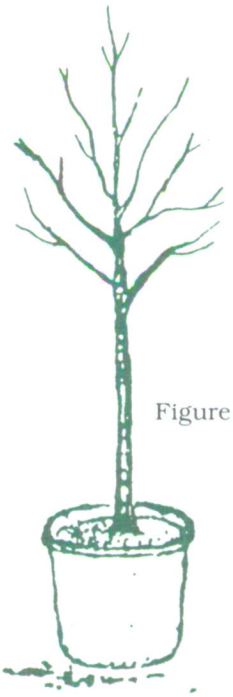
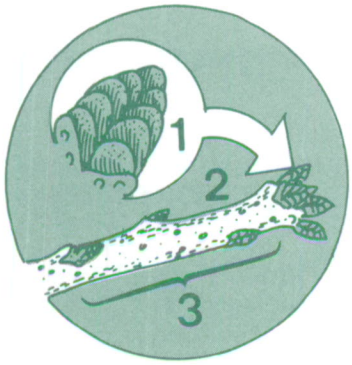


Figure C

Trees can be obtained from nurseries and garden centers as bare root stock (Figure A), root ball stock (Figure B), or container plants (Figure C).

HOW A TREE GROWS



BUDS

Buds contain the embryonic shoots, leaves and flowers for growth.

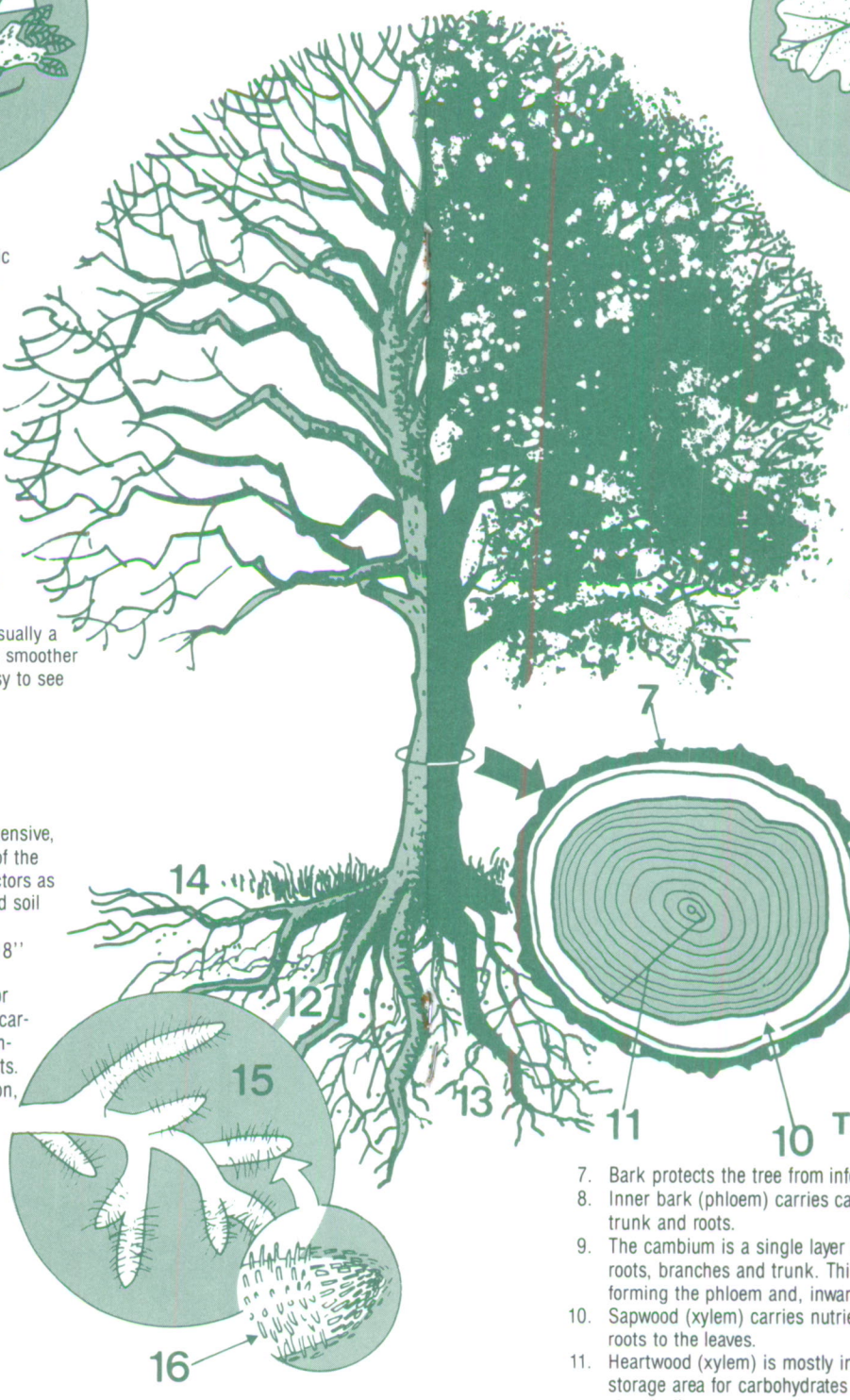
1. Terminal buds, those occuring at the end of the twigs, grow to produce additional height to the tree or give length to side branches.
2. Lateral buds are those along the side of the branch or twig. They grow into new branches forming the crown.
3. The last year's growth is usually a lighter color and somewhat smoother textured. The growth is easy to see on smaller trees.

LEAVES

4. Light and heat are required by the leaves for photosynthesis to occur.
5. Photosynthesis occurs within chloroplasts in the leaf's cells. Chlorophyll, the green pigment within the chloroplasts, traps light energy and converts it to carbohydrates such as starches and sugars.
6. Stomata are specialized cells through which carbon dioxide, needed for photosynthesis, enters and water and oxygen are released. They can close when water is limited.

ROOTS

12. The root system may be extensive, growing far from the base of the tree, depending on such factors as space available, species and soil texture.
13. Most tree roots are within 18'' of the soil surface.
14. Lateral roots serve to anchor the tree, provide storage for carbohydrates and act as a conductor of water and nutrients.
15. Nutrients, in a water solution, are absorbed through root hairs.
16. The root cap protects each root tip as it is forced through the soil by the elongating tissue behind.



TRUNK

7. Bark protects the tree from infection and injury.
8. Inner bark (phloem) carries carbohydrates to the branches, trunk and roots.
9. The cambium is a single layer of cells under the phloem in roots, branches and trunk. This layer of cells divides outwardly forming the phloem and, inwardly forming wood or xylem.
10. Sapwood (xylem) carries nutrients in water solution from the roots to the leaves.
11. Heartwood (xylem) is mostly inactive wood cells. It serves as storage area for carbohydrates and wastes, and can change chemically to restrict decay.

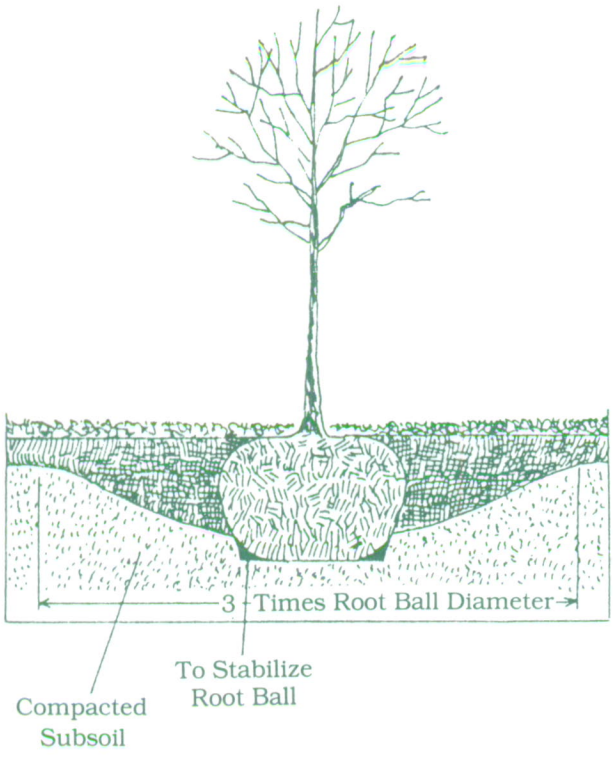
PLANTING TREES

Digging the hole — The planting hole should be at least three times wider than the roots or root ball. The sides should slope gradually, making the hole bowl shaped. The trees needs firm support to stabilize it, therefore it should rest on compacted or undisturbed soil.

On containerized plants remove the container and cut or straighten any roots that are circling around the root ball. The container can be easily removed by laying the plant on its side and gently tapping the container while pulling on the plant from its base. The container may also be removed by cutting it from the soil ball.

On balled and burlapped stock nylon twine, treated burlap, and wire baskets are often used. These materials have potential for causing damage. Therefore they should be removed from the upper-half of the root ball.

Roots of bare-root plants should be spread out in the wide shallow hole. Never allow the roots to circle or kink.



The planting hole should be shallow and wide to allow for rapid root growth after planting. Planting trees too deeply is a common problem.

Place the trees in the hole at the same level as they were in the nursery. Planting too deeply can kill the trees. In poorly drained or heavy clayey soils plant the trees a few inches higher than the surrounding grade. The tree should rest on compacted or undisturbed soil.

Amending the soil — If the soil has a high clay content it should be amended with up to 25 percent organic matter. New roots will grow more rapidly in this lighter, better-drained soil mixture.

Filling the hole — Fill the hole with soil, firming it gently. Soaking will help eliminate air pockets.

Fertilizing — Research has shown that fertilization is ineffective until the tree has started to establish a new root system.

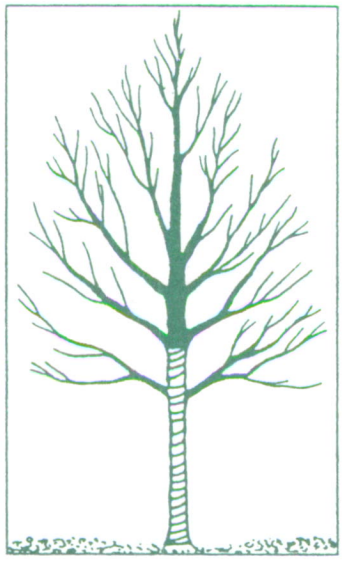
Season to plant — The most favorable times of the year to plant are spring and fall because temperatures are moderate and rainfall is usually plentiful. Summer planting of container grown plants is possible if a judicious watering program is followed.

Mulching — Studies have shown that wood-chip mulch can nearly double tree growth in the first few years after planting. A circle of mulch should be placed around every newly planted tree. The mulch should cover an area of at least four times the diameter of the root ball or root spread at the time of transplanting and should be 3 to 4 inches deep.

Staking — When stability is a problem, trees should be staked for 1 to 3 years. Care should be taken to avoid staking the plant too rigidly or allowing guy wires to damage the bark.

Trunk Protection — Trees with thin bark can be damaged by the warm winter sun and should be protected. Paper tree wrap should be applied in an overlapping spiral from the bottom up. Wrap the trunk in the late Fall and remove the wrap for the Spring.

Watering — Watering is necessary through the dry periods of the year. The soil 1 to 2 inches under the surface should be moist and form a ball when squeezed. If the soil crumbles, it is too dry. If it drips, it is too wet.

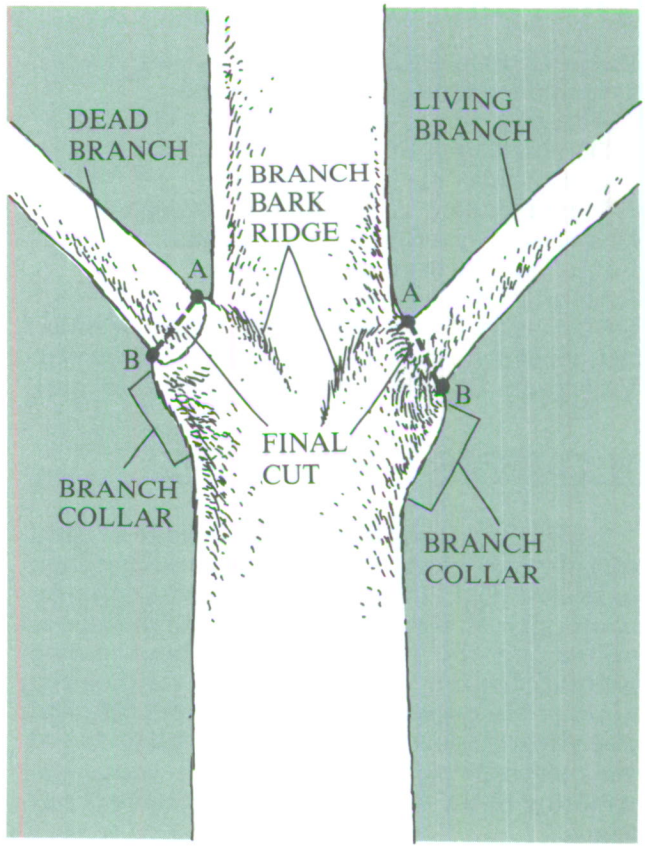


Trunks of newly planted trees should be protected with special tree-wrapping paper. The wrapping is applied by starting just below the soil level and working up. It should be tight enough to prohibit entry of bark borers.

Pruning — It is important to insure the best possible branch structure while the tree is young. At the time of planting remove all crossing, dead or diseased branches. Side branches of trees with a central leader should be evenly spaced along the trunk. If possible, do not allow more than one branch to originate at the same location.

Always make pruning cuts at the trunk, a fork or a bud. Follow the following steps to make the proper cut.

- Find the branch bark ridge
- Locate Point A
- Find the branch collar
- Locate Point B
- Make final cut between Points A and B



SOME TREES FOR ILLINOIS

When selecting trees consider using native species. Native plants are a part of Illinois' natural heritage.

Illinois Native Species

Ash, Blue (Fraxinus quadrangulata)
Buckeye, Ohio (Aesculus glabra)
Coffeetree, Kentucky (Gymnocladus dioicus)
Magnolia, Cucumber (Magnolia acuminata)
Maple, Black (Acer nigrum)
Oak, Bur (Quercus macrocarpa)
Oak, Chestnut (Q. prinus)
Oak, Chinkapin (Q. meuhlenbergii)
Oak, Shingle (Q. imbricaria)
Oak, Swamp White (Q. bicolor)
Pecan (Carya illinoensis)
Sourgum (Nyssa sylvatica)
Yellow-wood (Cladrastis lutea)

Trees with showy flowers

Buckeye, Red (Aesculus pavia)
Crabapple (Malus sp. and cultivars)

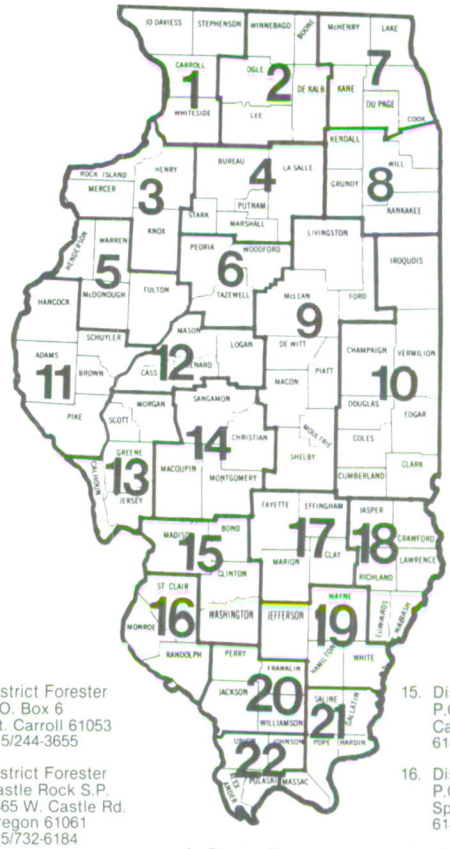
Adams	Prairifire
Donald Wyman	Profusion
Floribunda	Sargentii
Indian Magic	Zumi Calocarpa

Dogwood, Flowering (Cornus florida)
Plum, Wild (Prunus americana)
Redbud (Cercis canadensis)
Serviceberry, Shadbush (Amelanchier arborea)
Serviceberry, Allegheny (Amerlanchier laevis)
Viburnum, Blackhaw (Viburnum prunifolium)

ILLINOIS STATUTE

"Arbor and Bird Day. The last Friday in April of each year is designated as Arbor and Bird Day, to be observed throughout the State as a day for planting trees, shrubs and vines about the homes and along the highways and about public grounds within this State, and for holding appropriate exercises in the public schools and elsewhere to show the value of trees and birds and the necessity of their protection, thus contributing to the comforts and attractions of our State."

FOREST RESOURCES DISTRICTS



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815/244-3655

2. District Forester
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Oregon 61061
815/732-6184

3. District Forester
P.O. Box 126
Cambridge 61238
309/937-2122

4. District Forester
IVCC E. Campus
Bldg. 11
815 Orlando Smith Ave.
Oglesby 61348
815/224-4048

5. District Forester
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Macomb 61455
309/837-1124

6. District Forester
215 No. 5th
Pekin 61554
309/347-5119

7. District Forester
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McHenry 60050
815/385-1644

8. District Forester
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Kinmundy 62854
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TODAY & TOMORROW
TM

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How Can I Become a Member?
Contact:
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